

GPR 2002 Preliminary Program

(text only – no registration information included)

The Ninth International Conference on Ground Penetrating Radar (GPR 2002) will be held in Santa Barbara, California, USA, from April 29 to May 2, 2002, at the Radisson Hotel Santa Barbara. See <http://www.ece.ucsb.edu/gpr2002> for details and downloadable forms.

GPR 2002 is a biennial series of international scientific symposia devoted to the development of ground penetrating radar. The conference will present the most recent technical information and case studies on ground penetrating radar for engineers, scientists, and end users.

This Preliminary Program contains 132 papers from 21 countries that will be presented in oral and interactive poster sessions.

There will be a Special Session with a Panel Discussion on **“The New Regulatory Environment for GPR”** where the latest information on the FCC/NTIA rulings on wideband systems will be discussed.

Registration information and a Radisson Hotel reservation form is available on the conference website. The preferred method for registration and fee payment is on-line at <http://www.unex.ucsb.edu/sp/gpr>. Follow the easy steps for secure payment by credit card.

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GPR 2002 Organization

Executive Committee:

General Chair:
Steven Koppenjan

Co-Chair:
Hua Lee

Technical Review Panel:
Team Leader:
Michael Powers, USA

Panel:
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Brian Moorman, Canada
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Gary Olhoeft, USA
Mary Collins, USA

SUNDAY, APRIL 28

TUTORIAL REGISTRATION

8:00 - 8:30 a.m.

TUTORIAL 1 - Introduction to GPR

8:30 a.m. - 5:00 p.m. El Cabrillo Room

Presenter: Dr. Peter Annan
Sensors & Software (Canada)

8:30 - 10:00 Tutorial 1
10:00 - 10:20 Morning Break
10:20 - 12:00 Tutorial 1 (cont)
12:00 - 1:15 Lunch
1:15 - 3:00 Tutorial 1 (cont)
3:00 - 3:30 Afternoon Break
3:30 - 5:00 Tutorial 1 (cont)

TUTORIAL 2 - Three-Dimensional Acquisition, Processing, and Imaging of GPR data

8:30 a.m. - 5:00 p.m. La Cantina Room

Presenters: Swiss Federal Institute of Technology (ETH)
Alan Green Heinrich Horstmeyer
Klaus Holliger Jens Tronicke
Hansruedi Mauer Jan van der Kruk

8:30 - 10:00 Tutorial 2
10:00 - 10:20 Morning Break
10:20 - 12:00 Tutorial 2 (cont)
12:00 - 1:15 Lunch
1:15 - 3:00 Tutorial 2 (cont)
3:00 - 3:30 Afternoon Break
3:30 - 5:00 Tutorial 2 (cont)

2:00 - 7:00 Conference Registration

6:00 - 7:30 Opening Cocktail Reception

MONDAY, APRIL 29

CONFERENCE REGISTRATION

8:00 - 8:50 a.m.

SPECIAL SESSION 1

8:50 - 9:50 El Cabrillo Room

Chair: Steven Koppenjan, Bechtel Nevada, Special Technologies Laboratory, USA

8:50 - 9:00 Welcome Address
Steve Koppenjan, General Chair

9:00 - 9:20 Sponsor/Exhibitor Introductions (2 minutes each)
GroundProbe
Sensors & Software Inc.
Mala Geoscience
Geophysics Survey Systems, Inc.
Parallel Geoscience Corporation
Geophysical Archaeometry Laboratory
IDS Electronics
Roadscanners

9:20 - 9:40 Miniature ground penetrating radar for planetary subsurface characterization:
preliminary field test results
Soon Sam Kim, Steven R. Carnes, Narayan R. Mysoor, Christopher T. Ulmer, and
Raymond Arvidson

Poster Highlight

9:40 - 9:50 Ground-penetrating radar soil suitability map of the conterminous United States
James A. Doolittle, Fred E. Minzenmayer, Sharon W. Waltman, and Ellis C. Benham

9:50 - 10:10 Morning Break

POSTER SESSION 1

10:10 - 12:00 El Cabrillo Room

Chair: Duane Gardner, Bechtel Nevada, Special Technologies Laboratory, USA

10:10 - 10:50 Poster Introductions (2 minutes each)

10:50 - 12:00 Poster Viewing

1. Stratigraphic profiling of Antarctic firn with 400-MHz GPR at 1500 ns
Steven A. Arcone
2. Characterization of a tropical ice body on Iztaccíhuatl volcano, Mexico
Román Alvarez and Hugo Delgado

3. The detection of forensic burials in Florida using GPR
John J. Schultz, Anthony B. Falsetti, Mary E. Collins, Steven K. Koppenjan, and Michael W. Warren
4. Resonance of input impedance of bow-tie antenna placed on ground surface
Fan-Nian Kong
5. The influence of antenna configurations on 2-D GPR data. Information from polarization and amplitude measurement
P. Lutz, H. Perroud, and S. Garambois
6. Characterization of agricultural contaminant transport using ground penetrating radar and electrical data
P. Sénéchal, H. Perroud, and A.C.M. Bourg
7. Water detection in the Martian subsurface
E. Heggy, P. Paillou, F. Demontoux, G. Ruffié, and G. Grandjean
8. The integration of ground-penetrating radar and downhole soil moisture data to map the thickness and continuity of landfill capping
Tony S. Faulkner, Philip C. Mill, and Kyle T. Moyle
9. Mapping golf green drainage systems and subsurface features using ground penetrating radar
R. Boniak, s.K. Chong, S.J. Indorante, and J.A. Doolittle
10. GPR imaging of a turbidite outcrop in Almada Basin (Brazil)
J.M. Travassos, M.A.R. Ceia, and A. Abel G. Carrasquilla
11. Application of GPR to ornamental rock quarry
Paula L.F. da Rocha, Maracelo M. dos Anjos, Carlos J. de Abreu, Henrique Lorenzo, Adriano Caranassos, and Rinaldo Marques
12. Imaging karstic structures with GPR along a motorway under construction
Sophie Geraads and Gildas Omnes
13. A novel GPR system for high resolution inspection of walls and structures
Antonio Sarri, Guido Manacorda, and Mario Miniati
14. Improved optical positioning for GPR based structure mapping
Kyle Doerksen
15. Application possibilities of super resolution technique for GPR imaging
Shanker Man Shrestha, Ikuo Arai, and Takashi Miwa
16. Mathematical modeling of ground penetrating radar: parallel computing applications
N.J. Cassidy and G.W. Tuckwell

17. Microwave hologram reconstruction for the rascan type subsurface radar
V.V. Chapursky, S.I. Ivashov, W.W. Razevig, A.P. Sheyko, and I.A. Vasilyev
18. Ground-penetrating radar soil suitability map of the conterminous United States
James A. Doolittle, Fred E. Minzenmayer, Sharon W. Waltman, and Ellis C. Benham

12:00 - 1:15 Lunch - Vista Mar Monte Room

Borehole Radar - 3D Imaging

1:15 - 3:00 El Cabrillo Room

Chair: Jan van der Kruk, ETH, Switzerland

- 1:15 - 1:35 Basalt-flow imaging using a high-resolution directional borehole radar
Craig W. Moulton, David L. Wright, S. Raymond, David vonG. Smith, and Jarad D. Abraham
- 1:35 - 1:55 Interferometric borehole radar system
Kazunori Takahashi, Sixin Liu, and Motoyuki Sato
- 1:55 - 2:15 A directional borehole radar for three-dimensional imaging
K.W.A. van Dongen, P.M. van den Berg, and J.T. Fokkema
- 2:15 - 2:35 A slimline borehole radar for in-mine use
Declan Vogt
- 2:35 - 2:55 Borehole radar imaging in three-dimensions
N. Osman, I. Mason, G. Turner, and E. Wedepohl

NDT - Geotechnical

1:15 - 3:00 La Cantina Room

Chair: Lanbo Liu, University of Connecticut, USA

- 1:15 - 1:35 Development of material properties for railway application of ground penetrating radar
Theodore R. Sussmann, Katherine R. O'Hara, and Ernest T. Selig
- 1:35 - 1:55 Ground penetrating radar evaluation of railway track substructure conditions
G.R. Olhoeft and E.T. Selig
- 1:55 - 2:15 Non-destructive evaluation of soil hardness using elevated focused-beam radar
Matthew B. Higgins, Chi-Chih Chen
- 2:15 - 2:35 Imaging tree root system in situ
Lucian Wielopolski, George Hendry, Michael McGuigan, and Jeff Daniels

2:35 - 2:55 GPR investigations to reconstruct the geometry of the wooden structures in historical buildings
M. Lualdi and L. Zanzi

3:00 - 3:30 Afternoon Break

Antennas

3:30 - 5:00 El Cabrillo Room
Chair: Duane Gardner, Bechtel Nevada, USA

3:30 - 3:50 Radiation pattern of a borehole radar antenna
Karl J. Ellefsen and David L. Wright

3:50 - 4:10 GPR antenna simulations in time domain
A.G. Yarovoy, G. Mur, and L.P. Ligthart

4:10 - 4:30 Characterization of transient bow-tie antennas for ground penetrating radar
A.A. Lestari, A.G. Yarovoy, and L.P. Ligthart

4:30 - 4:50 Analysis of antennas for step-frequency ground penetrating radar
V. Mikhnev, Y. Maksimovitch, and P. Vainikainen

Archaeological Applications

3:30 - 5:00 La Cantina Room
Chair: Robert Freeland, Univ. of Tennessee, USA

3:30 - 3:50 Archaeological GPR investigation at Reenes-Le-Château, France
H.M. Jol, R.J. DeChaine, and R. Eisenman

3:50 - 4:10 Imaging the past: archaeological radar stratigraphic analysis at Mahram Bilqis
B.J. Moorman, J.-M. Maillol, J.L. Williams, F.S. Walter, and W.D. Glanzman

4:10 - 4:30 Barcombe Roman villa: an exercise in GPR time slicing and comparative geophysics
Erica Utsi and Amir Alani

4:30 - 4:50 3D imaging of an iron age archaeological site: GPR analysis at Muweilah, United Arab Emirates
R. Evangelista, P. Magee, and E. Wedepohl

TUESDAY, APRIL 30

SPECIAL SESSION 2

8:30 - 9:20 El Cabrillo Room

Chair: Hua Lee, University of California, Santa Barbara, USA

8:30 - 8:50 The new ground penetrating radar regulatory environment
G.R. Olhoeft

8:50 - 9:20 Automatic 3-dimensional mapping of features using GPR
W. Al-Nuaimy, H. Lu, S. Shihab, and A. Ericksen

Poster Highlight

9:10 - 9:20 GPR investigations at Qumran, Israel: site of the Dead Sea Scrolls discovery
H.M. Jol, M. Brochi, H. Eshel, R.A. Freund, J.F. Shroder, Jr., P. Reeder, and R. Dubay

9:20 - 9:50 Morning Break

POSTER SESSION 2

9:50 - 12:00 El Cabrillo Room

Chair: Duane Gardner, Bechtel Nevada, Special Technologies Laboratory, USA

9:50 - 10:30 Poster Introductions (2 minutes each)

10:30 - 12:00 Poster Viewing

1. Ground-based radar, close-range photogrammetry and digital terrain data applied together to archaeological heritage documentation
H. Lorenzo, P. Arias, M.C. Hernández, S. Álvarez, and T. Teixeira
2. Forensic application of sweep-frequency and impulse GPR
Robert S. Freeland, Ronald E. Yoder, Michelle L. Miller, and Steven K. Koppenjan
3. Searching for concealed human remains using GPR imaging of decomposition
Michelle L. Miller, Robert S. Freeland, and Steven K. Koppenjan
4. Ground water monitoring by GPR in Mongolia
Qi Lu, Motoyuki Sato
5. 3-D estimation of target positions with borehole radar using E-field sensor array
S. Ebihara and M. Sato
6. Characteristic features of radar detection of boundary between two dispersive media having minimum electrical contrast
N. Chubinsky, A. Krampuls, and O. Shishkova

7. Numerical analysis of surface clutter in GPR scenarios
A.G. Yarovoy
8. Electric field integral equation model for transient GPR antennas
A.A. Lestari, A.G. Yarovoy, and L.P. Ligthart
9. An optimized bowtie antenna for pulsed low frequency ground penetrating radar
M. Birch and K.D. Palmer
10. Automatic GPR target detection and clutter reduction using neural network
Hyoung-Sun Youn and Chi-Chih Chen
11. Application of music algorithm for imaging point reflectors near transmitting and receiving array
Takashi Miwa and Ikuo Arai
12. Application of 3D GPR plots to interpreting distribution of paint pigment contamination
Jutta Hager and Mario Carnevale
13. A new pseudo-3D GPR data method for hydraulic conductivity estimation over an unconfined aquifer
Erwan Gloaguen, Michel Chouteau, and Denis Marcotte
14. Estimating hydrogeologic parameters from radar data
Charles T. Young
15. Suitability of GPR for characterizing variably saturated sediments during transient flow
Michael B. Kowalsky, Yoram Rubin
16. Advanced processing of crosshole radar-tomographic data: inversion of partial data sets and error analysis
A. Becht, E. Appel, and P. Dietrich
17. GPR rapid survey system for small diameter tunnels
Eiji Sakurada and Masaharu Inagaki
18. A high frequency penetrating radar for masonry investigation
Massimiliano Pieraccini, Guido Luzi, Daniele Mecatti, Linhsia Noferini, and Carlo Atzeni
19. A case study-GPR testing of Shanghai historical bank building
Xiongyao Xie, Yonghui Zhao, and Chen Wang
20. GPR investigations at Qumran, Israel: site of the Dead Sea Scrolls discovery
H.M. Jol, M. Brochi, H. Eshel, R.A. Freund, J.F. Shroder, Jr., P. Reeder, and R. Dubai

12:00 - 1:15 Lunch - Vista Mar Monte Room

Hydrogeological Applications

1:15 - 3:00 El Cabrillo Room

Chair: David vonG Smith, U.S. Geological Survey

- 1:15 - 1:35 Field studies of GPR air launched surface reflectivity measurements of soil water content
J.D. Redman, J.L. Davis, L.W. Galagedara, and G.W. Parkin
- 1:35 - 1:55 Mapping surface soil water content with the ground wave of ground-penetrating radar
J.A. Huisman and W. Bouten
- 1:55 - 2:15 Combining crosshole georadar velocity and attenuation tomography for site characterization: a case study in an unconsolidated aquifer
J. Tronicke, H. Paasche, K. Holliger, and A.G. Green
- 2:15 - 2:35 Measuring the advance of a wetting front using cross borehole GPR
Dale F. Rucker and Ty P.A. Ferré
- 2:35 - 2:55 Temporal and spatial variation of soil water content measured by borehole GPR under irrigation and drainage
L.W. Galagedara, G.W. Parkin, J.D. Redman, and A.L. Endres

Data and Image Processing

1:15 - 3:00 La Cantina Room

Chair: Klaus Holliger, ETH, Switzerland

- 1:15 - 1:35 Synthetic-aperture GPR imaging with pulse-echo and step frequency FMCW systems
Hua Lee
- 1:35 - 1:55 Neural network target identifier based on statistical features of GPR signals
S. Shihab, W. Al-Nuaimy, Y. Huang, and A. Eriksen
- 1:55 - 2:15 Automatic target detection in GPR data
W. Al-Nuaimy, Y. Huang, S. Shihab, and A. Ericksen
- 2:15 - 2:35 Effective source wavelet determination
Jan van der Kruk and Evert Slob
- 2:35 - 2:55 Multicomponent imaging of different objects with different strike orientations
J. van der Kruk, J.H. Zeeman, and J. Groenenboom
- 3:00 - 3:30 Afternoon Break

Radar Systems and Technology

3:30 - 5:00 El Cabrillo Room

Chair: David Noon, Univ. of Queensland, Australia

- 3:30 - 3:50 Efficient large-scale underground utility mapping in New York City using a multi-channel ground-penetrating imaging radar system
Ralk Birken, Douglas E. Miller, Maclyn Burns, Paul Albats, Robert Casadonte, Ross Deming, Tony Derubeis, Thorkild Hansen, and Michael Oristaglio
- 3:50 - 4:10 3D utility mapping using electronically scanned antenna array
Egil S. Eide and Jens F. Hjelmstad
- 4:10 - 4:30 The ground penetrating radar of the Netlander mission
R. Ney, J.J. Berthelie, V. Ciarletti, B. Martinat, M. Hamelin, M. Rodriguez-Cassola, F. Dolon, S. Bonaime, A. Reineix, D. Nevejans, C. Duvanaud, F. Costard, P. Paillou
- 4:30 - 4:50 A dynamically configurable GPR data acquisition and display application
A. Wallis, A. Langman, and M.R. Inggs

Geological Applications

3:30 - 5:00 La Cantina Room

Chair: James Doolittle, USDA, USA

- 3:30 - 3:50 Geological mapping using GPR and differential GPS positioning - a case study
J. Aaltonen and J. Nissen
- 3:50 - 4:10 Reassessment of local paleocurrent directions in the Miami oolitic limestone with 3-D ground-penetrating radar
Mark Grasmueck and Ralf Weger
- 4:10 - 4:30 Subsurface imaging with low frequency SAR, field validation in France and Egypt using a ground-penetrating radar
G. Grandjean, Ph. Paillou, N. Baghdadi, E. Heggy, Th. August, and J. Achache
- 4:30 - 4:50 3-D georadar surveying in areas of moderate topographic relief
B. Heincke, T. Spillmann, H. Horstmeyer, and A.G. Green

Business Meeting

5:30 - 6:00 p.m.

WEDNESDAY, MAY 1

SPECIAL SESSION 3 - PANEL DISCUSSION

8:30 - 9:40 El Cabrillo Room

Chair: Gary Olhoeft, Colorado School of Mines, USA

Topic: **The New Regulatory Environment for GPR**

Panel members to be announced

9:40 - 9:45 GPR 2004 Venue Announcement

9:45 - 10:10 Morning Break

POSTER SESSION 3

10:10-12:00 El Cabrillo Room

Chair: Duane Gardner, Bechtel Nevada, Special Technologies Laboratory, USA

10:10 - 10:50 Poster Introductions (2 minutes each)

10:50 - 12:00 Poster Viewing

1. A back propagation neural network for identifying first-break times on cross borehole ground penetrating radar traces
Dale F. Rucker, Ty P.A. Ferré, and Mary Poulton
2. Unsupervised segmentation of subsurface radar images
W. Al-Nuaimy, Y. Huang, S. Shihab, and A. Eriksen
3. An algorithm for estimating the object depth accurately by ground-penetrating radar
Anxue-Zhang, Yansheng-Jiang, and Wenbing-Wang
4. A polarimetric model for a stepped frequency continuous wave ground penetrating radar
A. Langman and M.R. Inggs
5. Numerical modeling development for characterization complex GPR problems
Kwan-Ho Lee, N.V. Venkatarayalu, Chi-Chih Chen, Fernando Teixeira, and Robert Lee
6. A novel method of plastic landmine radar detection
N. Chubinsky and A. Krampuls
7. Near-range phase-based detection of small subsurface objects and characterization of local rough surfaces with bistatic wide-beamwidth antennas
B. Sai and L.P. Ligthart
8. An array of phase-shifted transmitters for GPR purposes
P. Lutz, H. Perroud, J.B. Daban, and E. De Bazelaire

9. Searching out mammoth remains in permafrost (Taimyr, Siberia) using ground-penetrating radar
Gilles Grandjean, Christian De Marliave, Bernard Buigues, Dick Mol, and Gilles Ruffie
10. Airborne ice thickness surveys using pulse radar and stepped frequency radar - possibilities and constraints
V. Damm, D. Eisenburger, M. Jenett, and H. Lentz
11. Application of ground penetrating radar in placer mining, a case study from Guyana's Potaro Region
Csaba Ékes, Adrian Hickin, Paul Matysek, and Eric Kinnan
12. GPR assessment of creep-fault induced damage in urban areas
D. Ibáñez-Garduño, R. Alvarez, V.H. Garduño-Monroy, I. Israde-Alcantara, and E. Arreygue-Rocha
13. GPR radar imaging of water table, salty water and sand stratigraphy in a coastal zone in Rio de Janeiro
T. Teixeira, H. Lorenzo, A. da Costa, and P. Arias
14. Cross-hole geo-radar monitoring for moisture distribution and migration in soil beneath an infiltration pit: a case study of an artificial groundwater recharge test in Niigata, Japan
Seiichiro Kuroda, Hiroomi Nakazato, Satoshi Nihira, Motoharu Hatekeyama, Mutsuo Takeuchi, Masato Asano, Yoshinori Todoroki, and Michiaki Konno
15. GPR experimental evaluation of subgrade soil characteristics for rehabilitation of roads
A. Benedetto and F. Benedetto
16. Applying a wavenumber notch filter to remove interferences caused by railway sleepers from a GPR section
Sophie Geraads, Bruno Charachon, Olivier Loeffler, and Gildas Omnes
17. A customized GPR system for railroad tracks verification
Guido Manacorda, Davide Morandi, Antonio Sarri, and Giuseppe Staccone
18. Resolution of GPR Bow-Tie Antennas
S.G Millard, A. Shaari, and J.H. Bungey

12:00 - 1:30 Lunch - Vista Mar Monte Room

GPR FIELD DEMONSTRATIONS

1:30 - 4:00 Dwight Murphy Park

CONFERENCE BANQUET

6:00 - 10:30 El Paseo Restaurant

THURSDAY, MAY 2

Data Display and Interpretation

8:30 - 9:55 El Cabrillo Room

Chair: Alan Langman, Univ. of Cape Town, South Africa

- 8:30 - 8:50 Advances in directional borehole radar data analysis and visualization
David vonG. Smith and Philip J. Brown II
- 8:50 - 9:10 Enhanced target imaging in 3-D using GPR data from orthogonal profile lines
Roger Roberts and David Cist
- 9:10 - 9:30 Better time picks = better travel times = better velocities; progress in developing
public domain software
John F. Hermance and Rabi N. Bohidar
- 9:30 - 9:50 GPR time slice images of the villa of Emperor Trajanus, Arcinazzo, Italy
(a.d. 52-117)
D. Goodman, S. Piro, and Y. Nishimura

UXO / Mine Detection

8:30 - 9:55 La Cantina Room

Chair: Chi-Chih Chen, Ohio State Univ., USA

- 8:30 - 8:50 Evolution of buried UXO classification using broadband, fully polarimetric GPR
Chi-Chih Chen, Matthew B. Higgins, and Kevin O'Neill
- 8:50 - 9:10 Radar response approximations for buried plastic landmines
Friedrich Roth, Piet van Genderen, and Michel Verhaegen
- 9:10 - 9:30 An ultra high frequency radar sensor for humanitarian demining tested on different
scenarios in 3D imaging mode
L. Zanzi, M. Lualdi, H.M. Braun, W. Borisch, G. Trilzsch
- 9:30 - 9:50 Full-polarimetric video impulse radar for landmine detection
A.G. Yarovoy, L.P. Ligthart, A.D. Schukin, and I.V. Kaploun
- 9:55 - 10:20 Morning Break

Sedimentology/Environmental Applications

10:20 - 12:00 El Cabrillo Room

Chair: Harry Jol, Univ. of Wisconsin-Eau Claire, USA

10:20 - 10:40 A field study of GPR attenuation rates in natural and contaminated silt
Steve A. Arcone and Allan J. Delaney

10:40 - 11:00 Sandy till characterized by ground penetrating radar
Ingelise Moller and Peter R. Jakobsen

11:00 - 11:20 Integration of ground penetrating radar, global positioning systems, and geographic information systems to create three-dimensional soil models
M. Tischler, M.E. Collins, S. Grunwald

11:20 - 11:40 A comparison of ground-penetrating radar facies and sediment characteristics in a pleistocene push moraine in the Netherlands
M.A.J. Bakker

11:40 - 12:00 Characterization of an aquitard and direct detection of LNAPL at Hill Air Force Base using GPR AVO and migration velocity analyses
Jake Deeds and John Bradford

Numerical Modeling

10:20 - 12:00 La Cantina Room

Chair: Alex Yarovoy, Delft Univ. of Technology, Netherlands

10:20 - 10:40 Numerical simulation of near-surface GPR in TE and TM modes
Lanbo Liu and Steve A. Arcone

10:40 - 11:00 Efficient calculation of scattering from a buried circular cylinder
Thorkild B. Hansen and Peter Meincke

11:00 - 11:20 Amplitude and waveform analysis of repetitive GPR reflections: a Lake Bonneville delta, Utah
Sarah E. Kruse and H.M. Jol

11:20 - 11:40 An electromagnetic model for a stepped-frequency continuous wave ground penetrating radar
A. Langman and M.R. Inggs

11:40 - 12:00 Detecting and classifying of physical and geometrical characteristics of the sub-surface through the use of computing diagnostics method for ground penetrating radar
V.N. Sablin, A. Yu. Grinev, and I.A. Chebakov

12:00 - 1:15 Lunch Vista Mar Monte Room

NDT - Concrete

1:15 - 3:00 El Cabrillo Room

Chair: Steven Millard, Univ. of Liverpool, UK

- 1:15 - 1:35 Application of GPR to map concrete to delineate embedded structural elements and defects
A.P. Annan, S.W. Cosway, and T. DeSouza
- 1:35 - 1:55 Review of NDT methods on a weak post-tensioned beam before autopsy
X. Dérobert, O. Abraham, and Ch. Aubagnac Ch.
- 1:55 - 2:15 Depth of first detectable defect in a masonry wall using GPR
S. Colombo, A. Giannopoulos, and M.C. Forde
- 2:15 - 2:35 GPR detection of voids in post-tensioned concrete bridge beams
Antonios Giannopoulos, Paul Macintyre, Scott Rodgers, and Mike C. Forde
- 2:35 - 2:55 Application of impulse radar for non-destructive investigation of concrete structures
Ch. Maierhofer and Th. Kind

Inverse Problems / Tomography

1:15 - 3:00 La Cantina Room

Chair: Hansruedi Maurer, ETH, Switzerland

- 1:15 - 1:35 Polarimetric borehole radar application for characterizing subsurface structure
Motoyuki Sato, Tomohiro Abe, Hui Zhou, and Jung-Woong Ra
- 1:35 - 1:55 GPR processing using local plane-wave imaging
Svein-Erik Hamran, Isabelle Lecomte, and Leiv-J. Gelius
- 1:55 - 2:15 Effects of random heterogeneities and topographic fluctuations on ground-penetrating radar antenna radiation
B. Lampe and K. Holliger
- 2:15 - 2:35 Processing and inversion of multi-offset and multi-azimuth GPR data for environmental and engineering applications
M. Pipan, E. Forte and I. Finetti
- 2:35 - 2:55 A tomographic approach for imaging targets embedded in a layered medium
Lorenzo Crocco, Raffaele Persico, and Francesco Soldovieri
- 3:00 - 3:30 Afternoon Break

Borehole Radar - Modeling

3:30 - 5:00 El Cabrillo Room

Chair: Motoyuki Sato, Tohoku Univ., Japan

- 3:30 - 3:50 Effects of small-scale stochastic heterogeneity on the tomographic inversion of crosshole georadar data
K. Holliger and H.R. Maurer
- 3:50 - 4:10 The effect of wet drilling in Kaolinitic strata on borehole radar performance
Wessel J.A. van Brakel, Marius D. van Wyk, Marc Rutschlin, and Johannes H. Cloete
- 4:10 - 4:30 3D radar response of a karstic zone
Bernard Giroux and Michel Chouteau
- 4:30 - 4:50 Borehole radar imaging from deviating boreholes
C.M. Simmat, N. Osman, J.E. Hargreaves, and I.M. Mason

Concrete / Pavement Evaluation

3:30 - 5:00 La Cantina room

Chair: Mike Forde, Univ. of Edinburgh, UK

- 3:30 - 3:50 Dielectric property of asphalt pavement specimens in dry, water-saturated, and frozen conditions
Lanbo Liu and Tieshuan Guo
- 3:50 - 4:10 A wide band system for measuring dielectric properties of concrete
S.G. Millard, J. David, Y. Huang, and J.H. Bungey
- 4:10 - 4:30 A simple method for estimation of water content of roadbeds using multi-offset GPR
J. Emilsson, P. Englund, and J. Friborg
- 4:30 - 4:50 A one-to-one comparison between radar results and reality on a concrete bridge
Johannes Hugenschmidt
- 5:00 – 6:30 CLOSING DRINKS